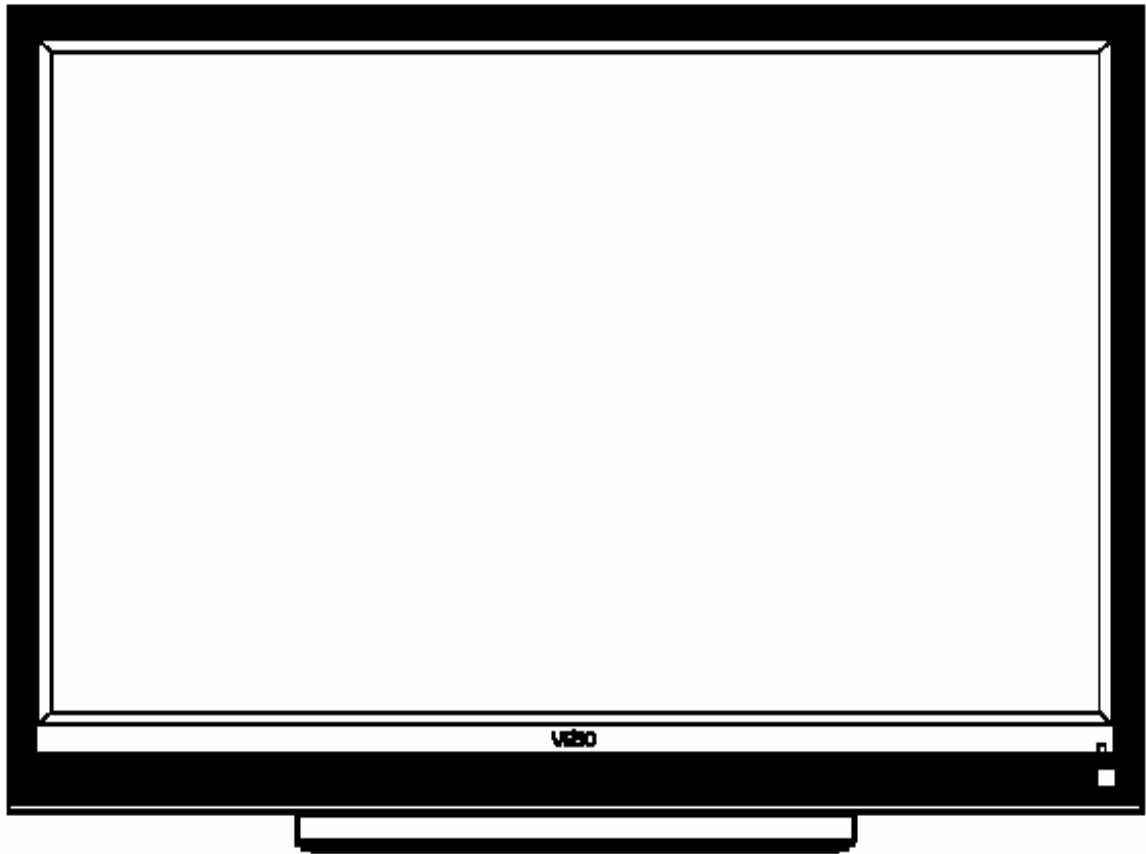


Service Manual



**Model #: VIZIO
VS420LF1A_LGD / VW42L
FHDTV10A_LGD-WUE-SAA1**

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Appendix

1. Main Board Circuit Diagram
2. Main Board PCB Layout
3. Assembly Explosion Drawing

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FCC INFORMATION

This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause unacceptable interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures -- reorient or relocate the receiving antenna; increase the separation between equipment and receiver; or connect the into an outlet on a circuit different from that to which the receiver is connected.

FCC WARNING

To assure continued FCC compliance, the user must use a grounded power supply cord and the provided shielded video interface cable with bonded ferrite cores. Also, any unauthorized changes or modifications to Amtrak products will void the user's authority to operate this device. Thus VINC Will not be held responsible for the product and its safety.

CE CERTIFICATION

This device complies with the requirements of the EEC directive 89/336/EEC with regard to "Electromagnetic compatibility."

SAFETY CAUTION

Use a power cable that is properly grounded. Always use the AC cords as follows – USA (UL); Canada (CSA); Germany (VDE); Switzerland (SEV); Britain (BASEC/BS); Japan (Electric Appliance Control Act); or an AC cord that meets the local safety standards.

Chapter 1 Features

1. Built in TV channel selector for TV viewing.
2. Simultaneous display of PC and TV images.
3. Connectable to PC's analog RGB port.
4. Built in S-video, HDTV, composite video, HDMI and TV out.
5. Built in auto adjust function for automatic adjustment of screen display.
6. Smoothing function enables display of smooth texts and graphics even if image with resolution lower than 1920x1080 is magnified.
7. Power saving to reduce consumption power to less than 1W.
8. On Screen Display: user can define display mode (i.e. color, brightness, contrast, sharpness, backlight), sound setting, TV channel program, aspect and gamma or reset all setting.

Chapter 2 Specification

1. LCD CHARACTERISTICS

General Specification of CMO M216H1-L01

Item	Specification	Unit
Diagonal size	1067.31	mm
Active Area	930.24x523.26	mm
Bezel Opening Area	939.0 (H) x 531.0 (V)	mm
Driver Element	a-Si TFT active matrix	-
Pixel Number	1920 x R.G.B. x 1080	pixel
Pixel Pitch	0.4845(H) x 0.4845(V)	mm
Pixel Arrangement	RGB vertical stripe	-
Display Colors	16.7million	color
Transmissive Mode	Normally black	-
Surface Treatment	Hard coating (3H), Anti-glare treatment of the front polarizer (Haze 13%)	-

2. OPTICAL CHARACTERISTICS

Viewing Angle (CR>10)

Left: 89°typ.

Right: 89°typ.

Up: 89°typ.

Down: 89°typ.

3. SIGNAL (Refer to the Timing Chart)

Sync Signal

1) Type: TMDS

2) Input Voltage Level: 100~240 Vac, 50/ 60 Hz

4. Input Connectors

USB, D-SUB15PIN (MINI, 3rows), SPDIF (digital audio out), HDMIX3, RCAX2 (component), RCAX2 (AUDIO in), RCAX2 (composite), RCAX2 (AUDIO in), S-Video, Tuner, RCAX1 (Line out)

5. POWER SUPPLY

Power Consumption: 250W MAXPower OFF: to less than 1W MAX

6. Speaker

Output 10W (max) X2

7. ENVIRONMENT

Operating Temperature: 5°C~35°C (Ambient)

Operating Humidity: Ta= 35 °C, 90%RH (Non-condensing)

Operating Altitude: 0~14,000 feet (4267.2m)(Non-Operating)

8. DIMENSIONS (Physical dimension)

Width: 1028.0 mm

Depth: 245.0mm

Height: 722.2mm

9. WEIGHT (Physical weight)

a. Net: 21.2±0.5kgs

b. Gross: 27.3±0.5kgs

Please pay attention to the followings when you use this TFT LCD module.

9-1. MOUNTING PRECAUTIONS(1) You must mount a module using holes arranged in four corners or four sides.

(2) You should consider the mounting structure so that uneven force (ex. Twisted stress) is not applied to the module. And the case on which a module is mounted should have sufficient strength so that external force is not transmitted directly to the module.

(3) Please attach the surface transparent protective plate to the surface in order to protect the polarizer.

Transparent protective plate should have sufficient strength in order to the resist external force.

- (4) You should adopt radiation structure to satisfy the temperature specification.
- (5) Acetic acid type and chlorine type materials for the cover case are not desirable because the former generates corrosive gas of attacking the polarizer at high temperature and the latter causes circuit break by electro-chemical reaction.
- (6) Do not touch, push or rub the exposed polarizes with glass, tweezers or anything harder than HB pencil lead. And please do not rub with dust clothes with chemical treatment.
Do not touch the surface of polarizer for bare hand or greasy cloth.(Some cosmetics are detrimental to the polarizer.)
- (7) When the surface becomes dusty, please wipe gently with absorbent cotton or other soft materials like chamois soaks with petroleum benzene.
Normal-hexane is recommended for cleaning the adhesives used to attach front / rear polarizers. Do not use acetone, toluene and alcohol because they cause chemical damage to the polarizer.
- (8) Wipe off saliva or water drops as soon as possible. Their long time contact with polarizer causes deformations and color fading.
- (9) Do not open the case because inside circuits do not have sufficient strength.

9-2. OPERATING PRECAUTIONS

- (1) The spike noise causes the mis-operation of circuits. It should be lower than following voltage:
 $V=\pm 200\text{mV}$ (Over and under shoot voltage)

-
- (2) Response time depends on the temperature. (In lower temperature, it becomes longer.)
 - (3) Brightness depends on the temperature. (In lower temperature, it becomes lower.) And in lower temperature, response time (required time that brightness is stable after turned on) becomes longer.
 - (4) Be careful for condensation at sudden temperature change. Condensation makes damage to polarizer or electrical contacted parts. And after fading condensation, smear or spot will occur.
 - (5) When fixed patterns are displayed for a long time, remnant image is likely to occur.
 - (6) Module has high frequency circuits. System manufacturers shall do sufficient suppression to the electromagnetic interference. Grounding and shielding methods may be important to minimize the interference.

9-3. HANDLING PRECAUTIONS FOR PROTECTION

- (1) The protection film is attached to the bezel with a small masking tape. When the protection film is peeled off, static electricity is generated between the film and polarizer. This should be peeled off slowly and carefully by people who are electrically grounded and with well ion-blown equipment or in such a condition, etc.
- (2) When the module with protection film attached is stored for a long time, sometimes there remains a very small amount of glue still on the bezel after the protection film is peeled off.
- (3) You can remove the glue easily. When the glue remains on the bezel surface or its vestige is recognized, please wipe them off with absorbent cotton waste or other soft material like chamois soaked with normal-hexane.

Chapter 3 On Screen Display

Main unit button

(1). POWER 

(2). MENU

(3). CH +

(4). CH -

(5). VOL +

(6). VOL -

(7). INPUT

TV Source

A. PICTURE :

- a. PICTURE MODE (CUSTOM/ STANDARD / MOVIE / GAME)
- b. BACKLIGHT (0~100)
- c. BRIGHTNESS (0~100)
- d. CONTRAST (0~100)
- e. COLOR (0~100)
- f. TINT (-32~32)
- g. SHARPNESS (0~100)
- h. COLOR TEMPERATURE (CUSTOM/COOL/NORMAL/WARM)
- i. ADVANCED VIDEO
 - i-1. DNR(OFF/LOW/MEDIUM/STRONG)
 - i-2. BLACK LEVEL EXTENDER (ON/OFF)
 - i-3. WHITE PEAK LIMITATOR (ON/OFF)
 - i-4. CTI(OFF/LOW/MEDIUM/STRONG)
 - i-5. FLESH TONE (ON/OFF)
 - i-6. ADAPTIVE LUMA (ON/OFF)
 - i-7. DCR(ON/OFF)

B. AUDIO :

- a. VOLUME (0~100)
- b. BASS (0~100)
- c. TREBLE (0~100)
- d. BALANCE (-50~50)
- e. SURROUND (ON/OFF)
- f. DIGITAL AUDIO OUT (PCM)
- g. SPEAKERS (ON/OFF)
- h. LIP SYNC (0~5)

C. TV :

- a. TUNER MODE (ANTENNA/CABLE)
- b. AUTO SEARCH (RUN)
- c. SKIP CHANNEL (TABLE)
- d. MTS (STEREO)
- e. TIME ZONE
(HAWALL/EASTTERN/INDIANA/CENTRAL/MOUNTAIN/ARIZONA/PACIFI
C/ALASKA)
- f. Daylight Saving(ON/OFF)

D. SETUP :

- a. LANGUAGE (ENGLISH/FRENCH/SPANISH)
- b. SLEEP TIMER (OFF/30/60/90/120)
- c. WIDE (WIDE)
- d. INPUT NAMING
- e. CC (ON/OFF)
- f. CC ON MUTE (ON/OFF)
- g. DIGITAL CC STYLE
 - g-1. CAPTION STYLE
(AS BROADCASTER/CUSTOM)
 - g-2. FONT SIZE(SMALL/MEDIUM/LARGE)
 - g-3. FONT COLOR
(GREEN/BLUE//RED/CYAN/YELLOW/MAGENTA/BLACK/WHITE)

-
- g-4. FONT OPACITY
(SOLID/TRANSLUCENT/TRANSPARENT)
 - g-5. BACKGROUND COLOR
(GREEN/BLUE//RED/CYAN/YELLOW/MAGENTA/BLACK/WHITE)
 - g-6. BACKGROUND OPACITY
(SOLID/TRANSLUCENT/TRANSPARENT)
 - g-7. WINDOW COLOR
(GREEN/BLUE//RED/CYAN/YELLOW/MAGENTA/BLACK/WHITE)
 - g-8. WINDOW OPATITY
(SOLID/TRANSLUCENT/TRANSPARENT)
 - h. H/V POSITION
 - i. RESET ALL SETTING

E. PARENTAL :

- a. PASSWORD
 - a-1. CHANNEL BLOCK
 - a-2. US TV RATING
 - a-3. US MOVIE RATING
 - a-4. Canadian English Rating
 - a-5. Canadian French Rating
 - a-6. CHECK FOR NEW DTV RATING
 - a-7. BLOCK TV UNRATED
 - a-8. ACCESS CODE EDIT

RGB Mode

A. PICTURE ADJUST :

- a. AUTO PICTURE (Run)
- b. BACKLIGHT (0~100)
- c. BRIGHTNESS (0~100)
- d. CONTRAST (0~100)
- e. COLOR TEMPERATURE(CUSTOM, 6500K, 9300K)
- f. H-SIZE (0~255)
- g. H-POSITION (0~100)
- h. V-POSITION (0~100)
- i. FINE TUNE (0~31)

B. AUDIO :

- a. VOLUME (0~100)
- b. BASS (0~100)
- c. TREBLE (0~100)
- d. BALANCE (-50~50)
- e. SURROUND (ON/OFF)
- f. SPEAKERS (ON/OFF)

C. SETUP :

- a. LANGUAGE (ENGLISH/FRENCH/SPANISH)
 - b. SLEEP TIMER (OFF/30/60/90/120)
- RESET ALL SETTING

Video MODE

AV-C 、 AV-S 、 COMPONENT

A. PICTURE :

- a. PICTURE MODE (CUSTOM/ STANDARD / MOVIE / GAME)
- b. BACKLIGHT (0~100)
- c. BRIGHTNESS (0~100)
- d. CONTRAST (0~100)
- e. COLOR (0~100)
- f. TINT (-32~32)
- g. SHARPNESS (0~100)
- h. COLOR TEMPERATURE (CUSTOM/COOL/NORMAL/WARM)
- i. ADVANCED VIDEO
 - i-1. DNR(OFF/LOW/MEDIUM/STRONG)
 - i-2. BLACK LEVEL EXTENDER (ON/OFF)
 - i-3. WHITE PEAK LIMITATOR (ON/OFF)
 - i-4. CTI(OFF/LOW/MEDIUM/STRONG)
 - i-5. FLESH TONE (ON/OFF)
 - i-6. ADAPTIVE LUMA (ON/OFF)
 - i-7. DCR(ON/OFF)

B. AUDIO :

- a. VOLUME (0~100)
- b. BASS (0~100)
- c. TREBLE (0~100)
- d. BALANCE (-50~50)
- e. SURROUND (ON/OFF)
- f. SPEAKERS (ON/OFF)

D. SETUP :

- a. LANGUAGE (ENGLISH/FRENCH/SPANISH)
- b. SLEEP TIMER (OFF/30/60/90/120)
- c. RESET ALL SETTING

E. PARENTAL :

- a. PASSWORD
 - a-1. CHANNEL BLOCK
 - a-2. US TV RATING
 - a-3. US MOVIE RATING
 - a-4. Canadian English Rating
 - a-5. Canadian French Rating
 - a-6. CHECK FOR NEW DTV RATING
 - a-7. BLOCK TV UNRATED
 - a-8. ACCESS CODE EDIT

HDMI MODE :

A. PICTURE :

- a. PICTURE MODE (CUSTOM/ STANDARD / MOVIE / GAME)
- b. BACKLIGHT (0~100)
- c. BRIGHTNESS (0~100)
- d. CONTRAST (0~100)
- e. COLOR (0~100)
- f. TINT (-32~32)
- g. SHARPNESS (0~100)
- h. COLOR TEMPERATURE (CUSTOM/COOL/NORMAL/WARM)
- i. ADVANCED VIDEO
 - i-1. DNR(OFF/LOW/MEDIUM/STRONG)
 - i-2. BLACK LEVEL EXTENDER (ON/OFF)
 - i-3. WHITE PEAK LIMITATOR (ON/OFF)
 - i-4. CTI(OFF/LOW/MEDIUM/STRONG)
 - i-5. FLESH TONE (ON/OFF)
 - i-6. ADAPTIVE LUMA (ON/OFF)
 - i-7. DCR(ON/OFF)

B. AUDIO :

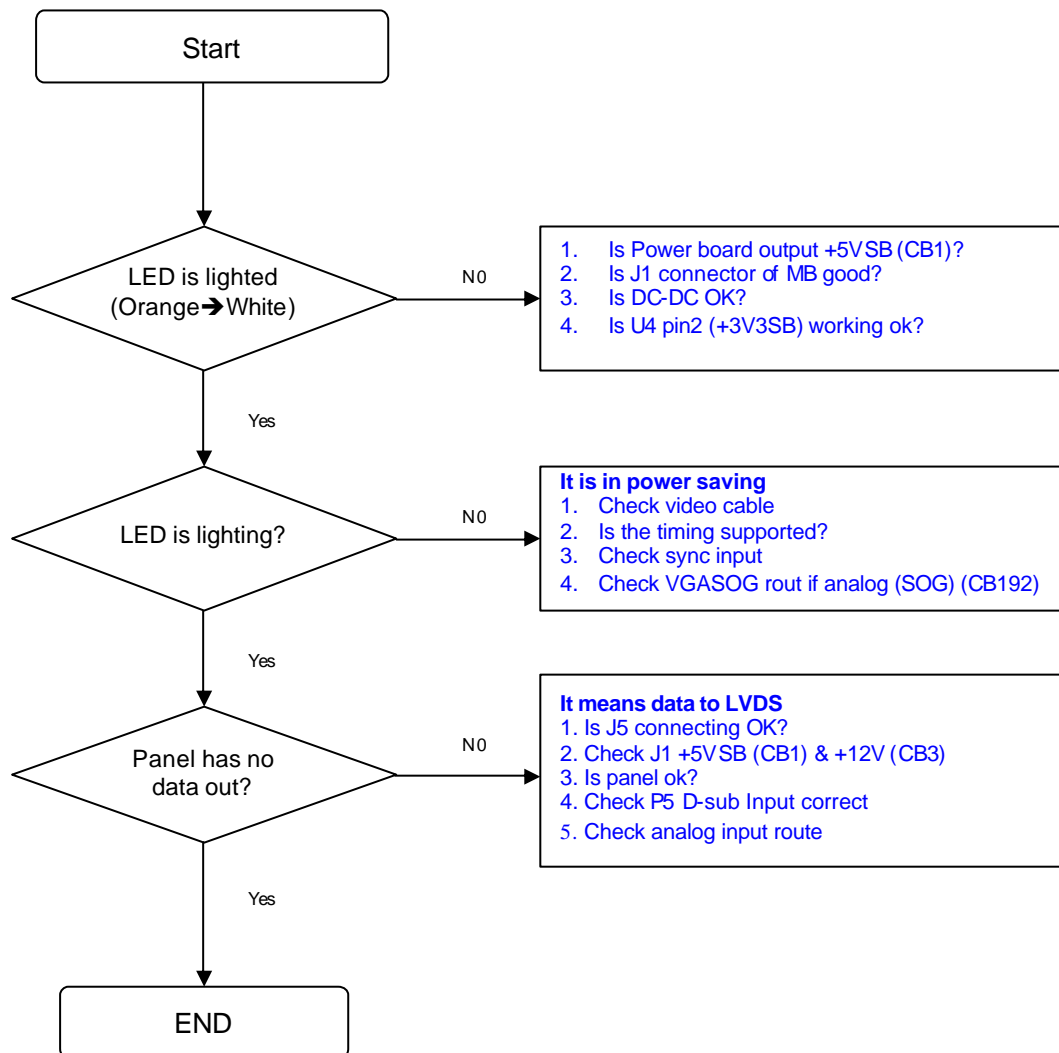
- a. VOLUME (0~100)
- b. BASS (0~100)
- c. TREBLE (0~100)
- d. BALANCE (-50~50)
- e. SURROUND (ON/OFF)
- f. SPEAKERS (ON/OFF)

C. SETUP :

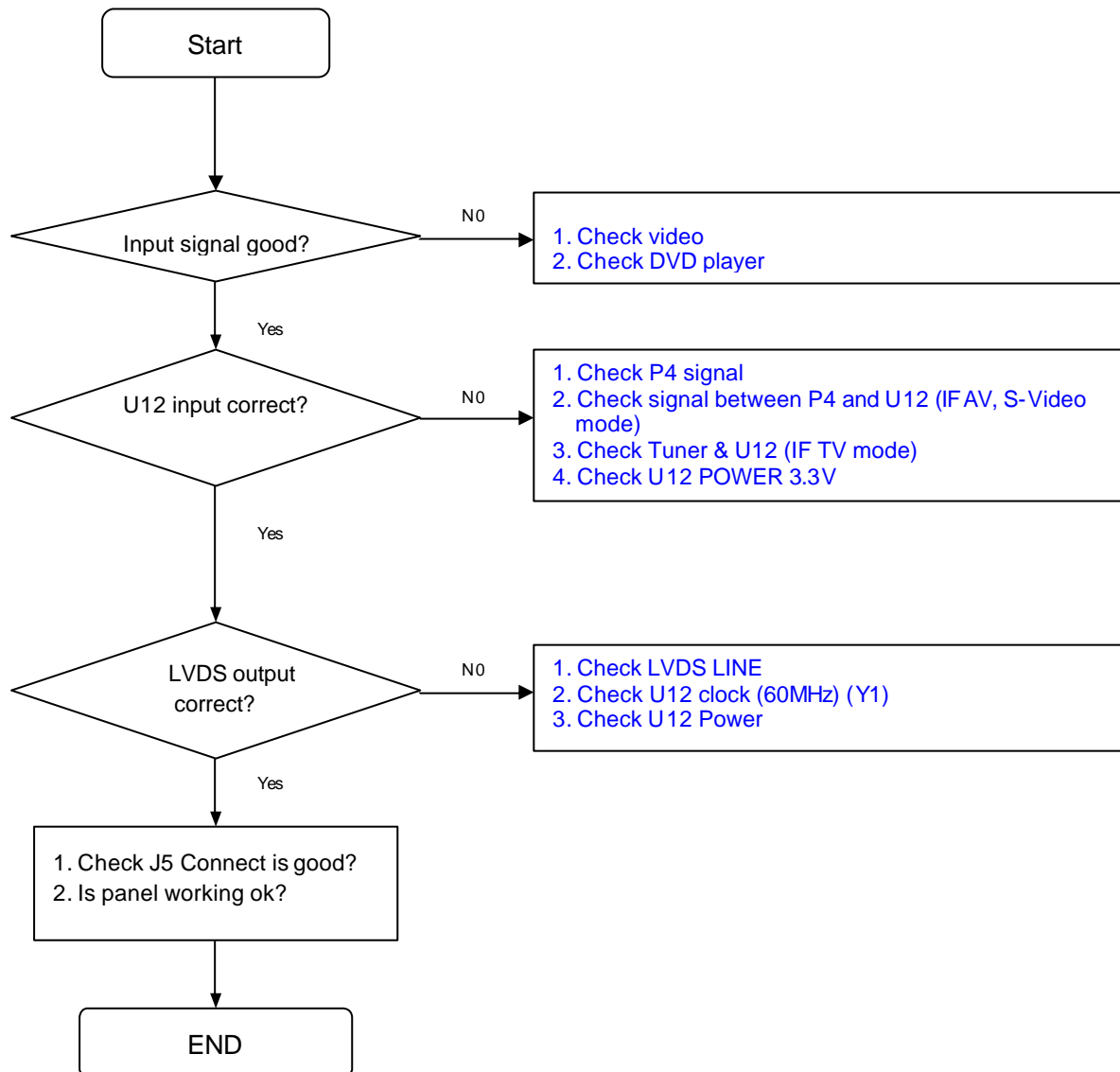
- a. LANGUAGE (ENGLISH/FRENCH/SPANISH)
- b. SLEEP TIMER (OFF/30/60/90/120)
- c. RESET ALL SETTING

Chapter 9 Trouble shooting

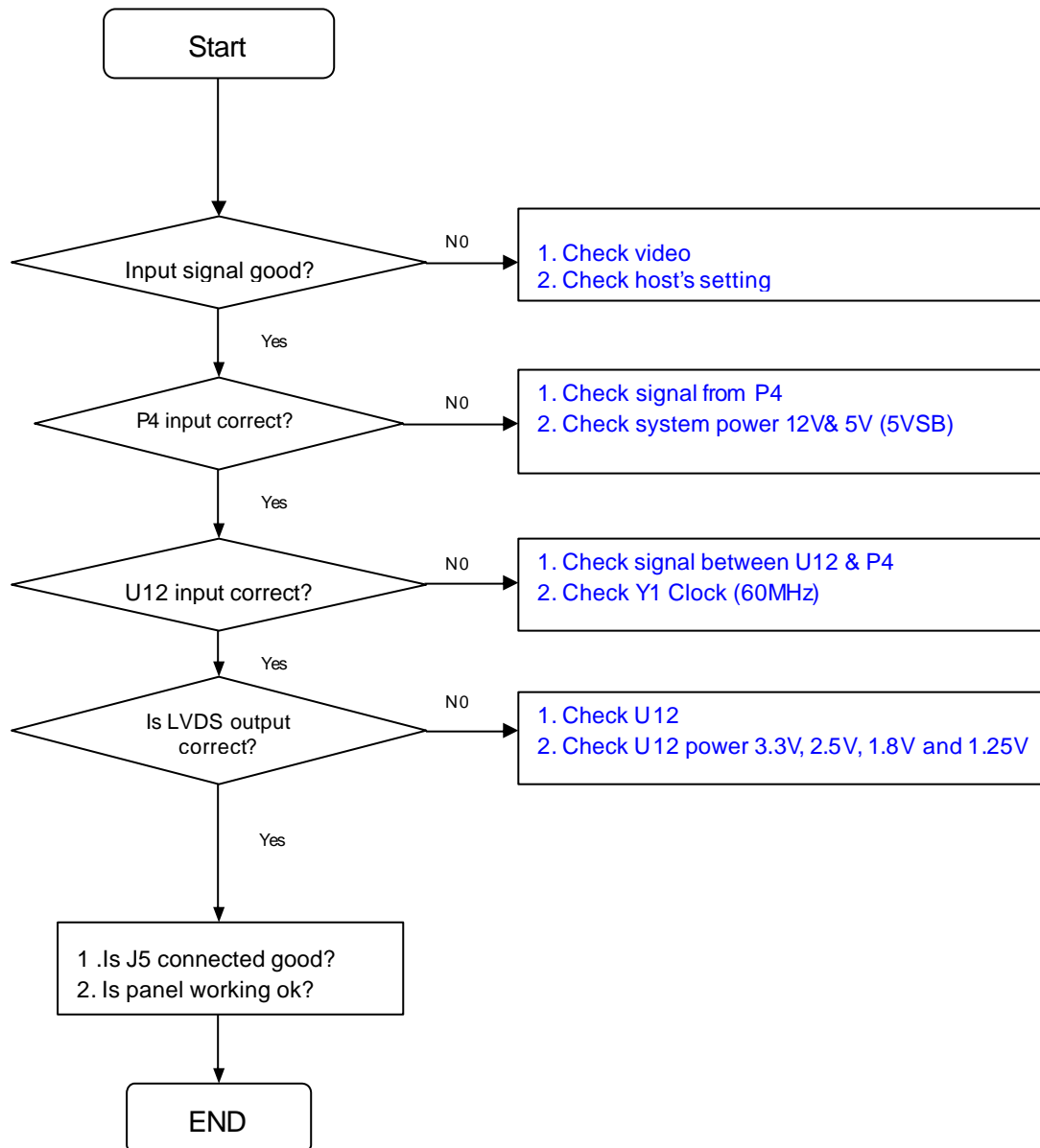
MONITOR DISPLAY NOTHING (PC MODE)



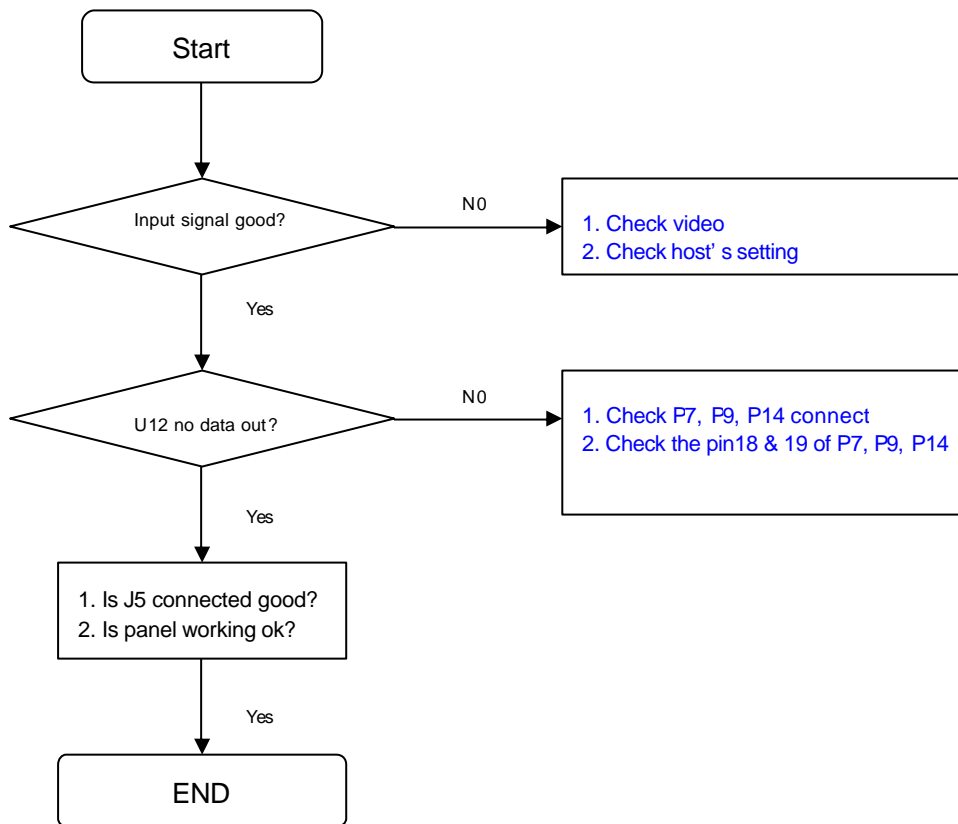
(TV, AV, S-VIDEO) IS NOT DISPLAY CORRECTLY



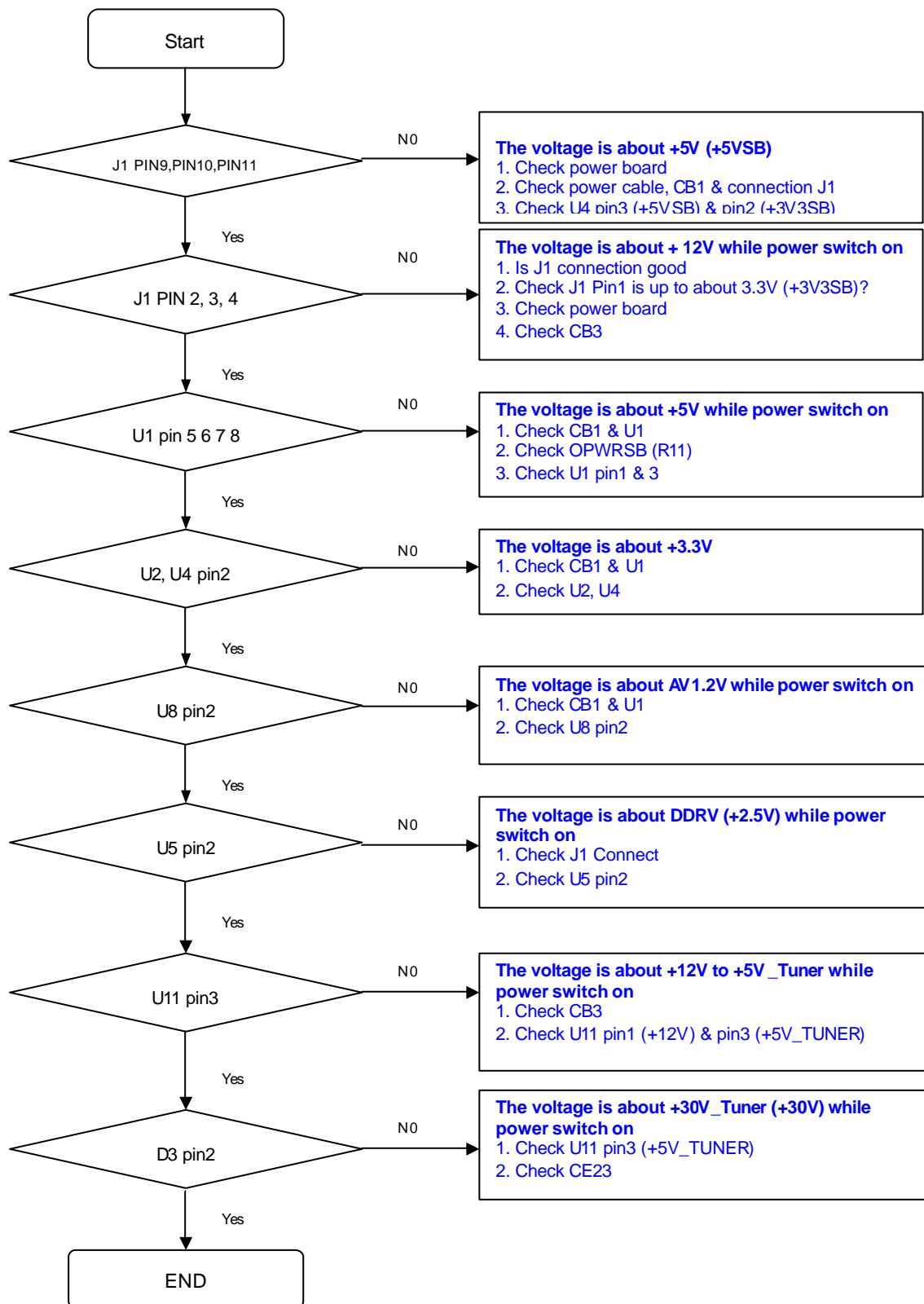
(COMPONENT) IS NOT DISPLAY CORRECTLY



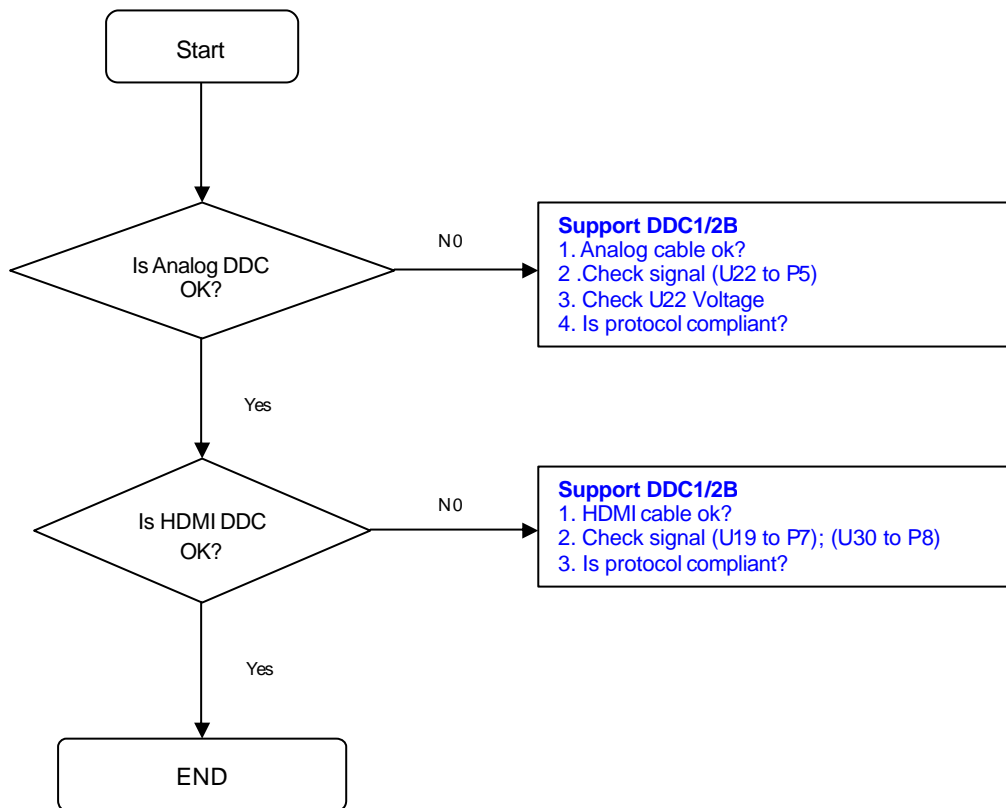
HDMI IS NOT DISPLAY CORRECTLY



TROUBLE OF DC-DC CONVERTER



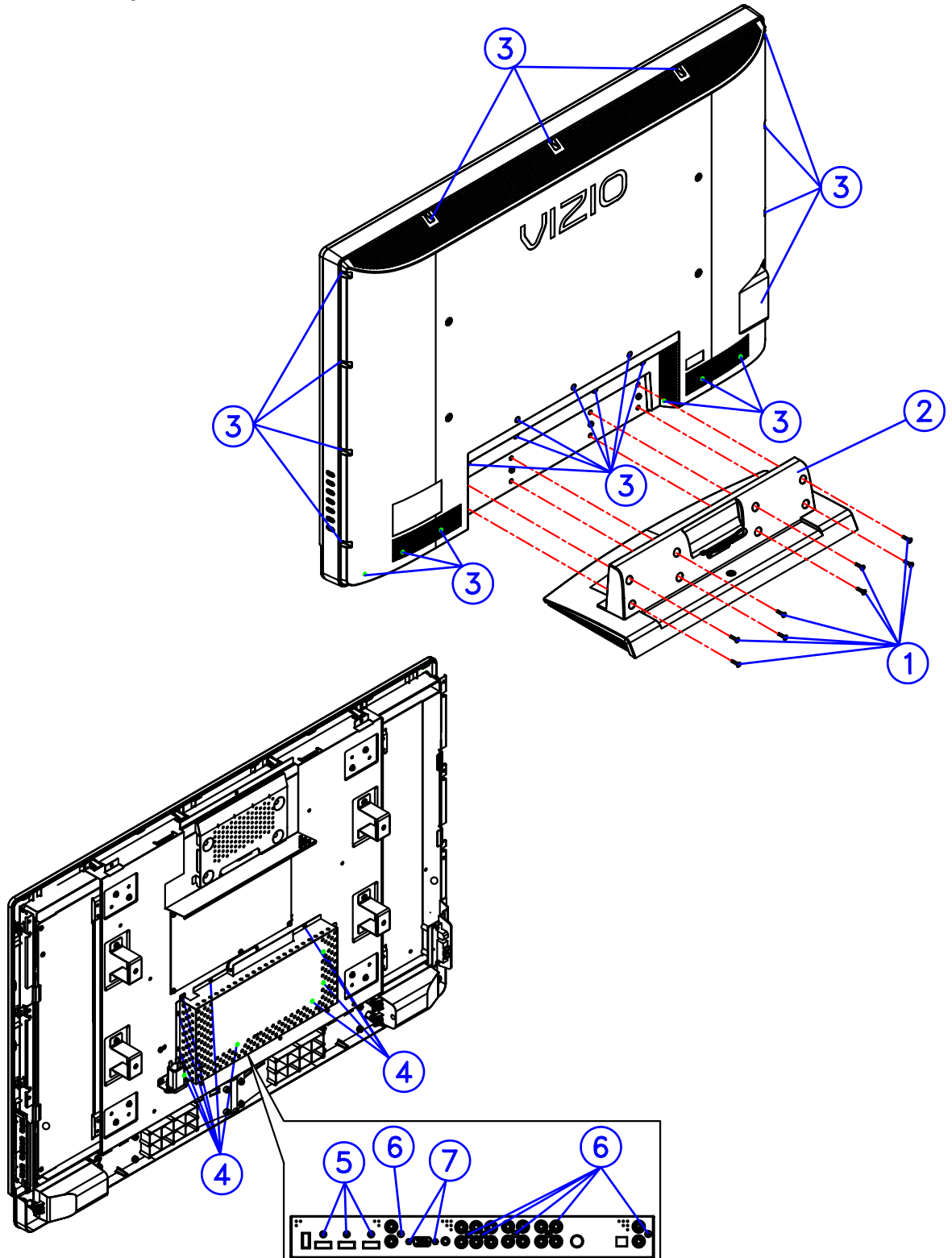
TROUBLE OF EDID READING



1. REAR COVER ASS'Y REMOVAL

Note: Spread a mat underneath to avoid damaging the TV surface.

- 1) Remove eight screws ① from Base Ass'y ②.
- 2) Separate the Base Ass'y ②.
- 3) Remove twenty-four screws ③ from rear cover.
- 4) Separate the rear cover.
- 5) Remove ten screws ④ from Main shielding.
- 6) Remove two screws ⑤, six screws ⑥, and two hexagon screws ⑦ from Main Shielding.
- 7) Separate the Main Shielding.



2. POWER BD ASS'Y REMOVAL

- 1) Remove the connector ⑨ (CN4) ⑧ (CN5) of the inverter cable.
- 2) Remove the connector ⑩ (CN2) of the power cable.
- 3) Remove the connector ⑪ (CN1) of the AC IN cable.
- 4) Remove six screws ⑫ from Power BD ASS'Y .
- 5) Separate the Power BD ASS'Y .

3. MAIN BD ASS'Y REMOVAL

- 2) Remove the connector ⑬ (J6) of the speaker cable.
- 3) Remove the connector ⑭ (J1) of the Power cable.
- 4) Remove the connector ⑮ (J7) of the LVDS cable.
- 5) Remove the connector ⑯ (J2) of the Keypad cable.
- 6) Remove the connector ⑰ (J8) of the connector cable.
- 7) Remove six screws ⑱ from MAIN BD .
- 8) Separate the MAIN BD .

